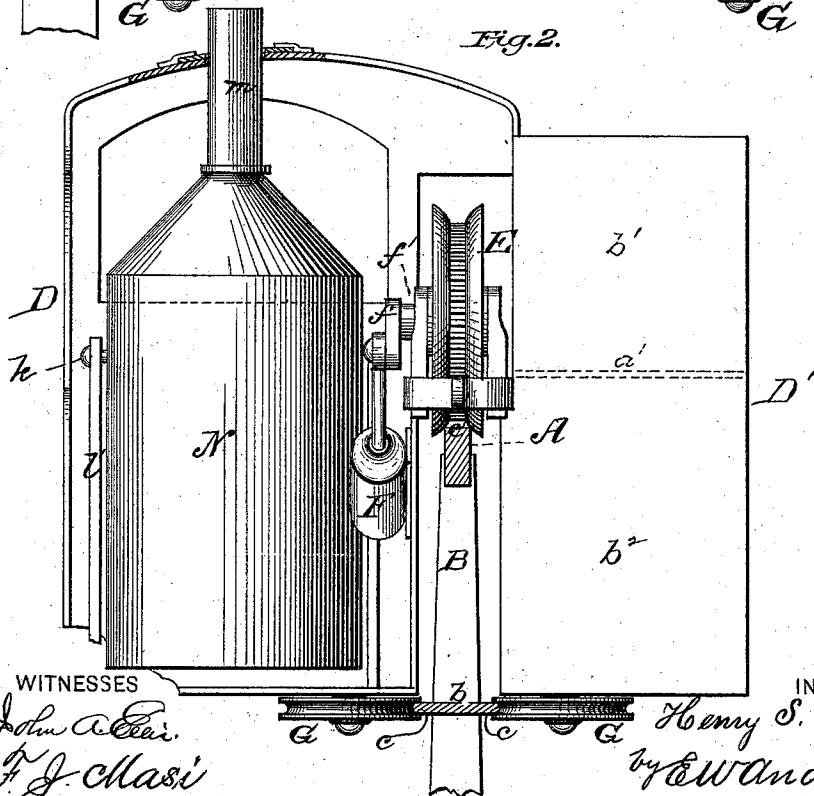
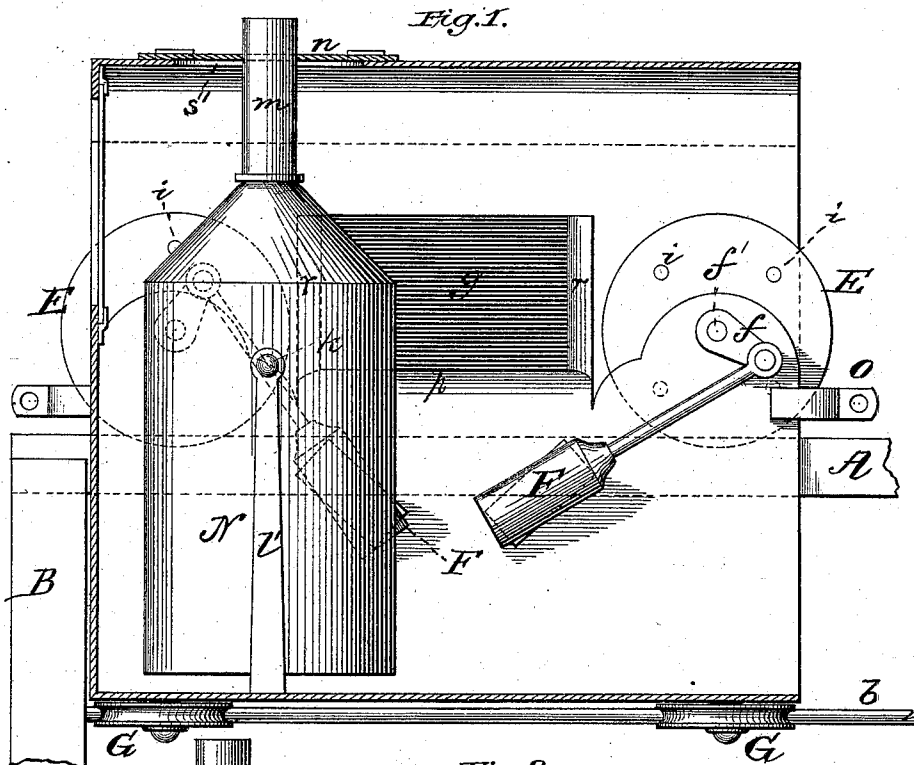


H. S. PRUYN.
 Locomotive for Single Railways.

2 Sheets—Sheet 1.

No. 214,701.

Patented April 22, 1879.



WITNESSES
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Fig. 5.

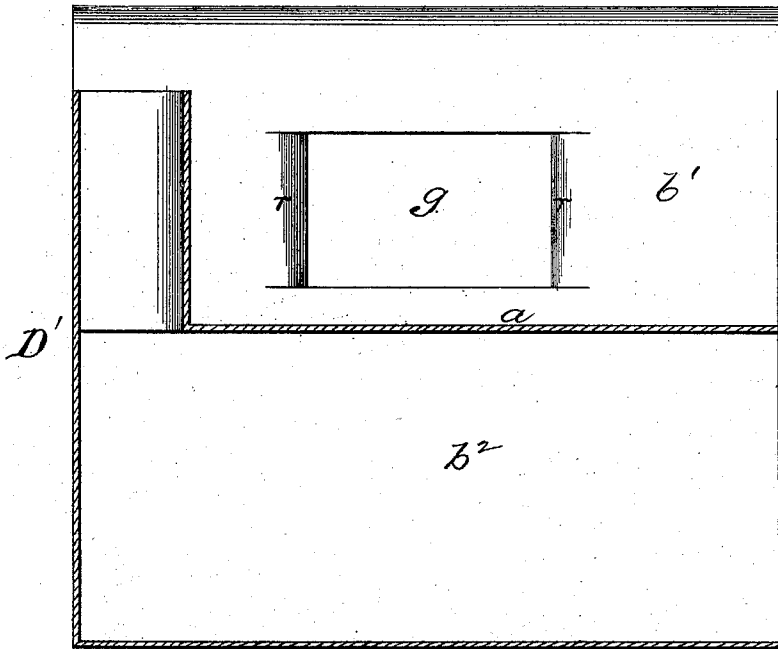
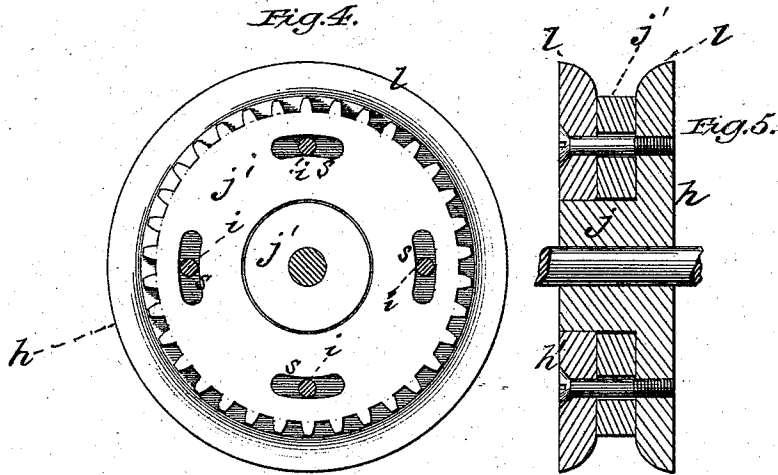


Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY S. PRUYN, OF CENTRE WHITE CREEK, NEW YORK.

IMPROVEMENT IN LOCOMOTIVES FOR SINGLE RAILWAYS.

Specification forming part of Letters Patent No. 214,701, dated April 22, 1879; application filed February 11, 1879.

To all whom it may concern:

Be it known that I, HENRY S. PRUYN, of Centre White Creek, in the county of Washington and State of New York, have invented a new and valuable Improvement in Combined Locomotive and Tender; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal section of my invention. Fig. 2 is a transverse section of the same. Fig. 3 is a longitudinal section of the tender, and Figs. 4 and 5 are sectional views of the driving-wheels.

This invention has relation to improvements in combined locomotives and tenders, operating on the single-rail elevated system; and the nature of the invention consists in the construction and novel arrangement of parts, as hereinafter shown and described.

In the annexed drawings, the letter A designates the upper or bearing rail, supported by spaced uprights B, erected on a suitable base and braced against sagging. At a suitable distance below rail A is a second rail, *b*, arranged parallel to rail A and in a horizontal position, and having at each edge a tread, *c*, in a plane at right angles to the tread *c'* of the upper or bearing rail. D indicates the cab or housing of the driving machinery, and D' a similar structure, preferably without a roof, and constituting the tender. The part D' is divided by a horizontal partition, *a'*, into two divisions, *b'* and *b''*, the upper one being a receptacle for coal or other fuel, and the lower one the water-tank.

The cab extends down on one side of the track, and the tender on the other, until their bottoms are nearly on a level with the rail *b*, and are rigidly connected together (so as to be incapable of separation) above the rail A by a bridge, truss, or other suitable device or devices. The whole is supported by the driving and transporting wheels E, arranged between the cab and tender, and journaled therein, pedestals or other similar devices being provided for the purpose. These wheels are each driven

by an independent oscillating engine, F, and their cranks *f* are secured to the journals *f'*, the two engines being obliquely pivoted and in general direction at right angles with each other. Between the engines is an opening, *g*, leading into the coal-bunkers, through which coal is taken and shoveled into the fire-box of the boiler. This opening is provided at its sides with the guards *r*, overhanging the wheels, and at its bottom with a bridge-guard, *p*, spanning the track, and preventing coal from dropping on the same. The cab and tender are provided on their under sides with grooved anti-friction wheels G, that bear against opposite sides of the lower rail, *b*, and prevent the cab and tender from swaying from side to side, the said wheels being journaled in their respective positions nearly horizontally.

The driving-wheels E are made in two sections, *h h'*, the former having a hub, *j*, upon which is passed, first, an annular gear-wheel, *j'*, and then the section *b'*, the latter being usually shrunk on. The gear *j'* is provided with a number of curved slots, *s*, concentric with its perimeter, through which extend the bolts *i*, passing through both sections of the wheel, and secured in position in any suitable way. The wheels are double-flanged, as shown at *l*, and bear upon both sides of the upper rail, A, holding the gear-wheel clear of the track when the engine is on a level, but causing it to engage with a rack upon the track when the engine is ascending a grade. At the moment of engaging said rack, should the teeth of the gear strike upon those of the rack, the former rotates upon the hub of the wheel without engaging the latter until the teeth of the said gear are in position to enter the interspaces of the teeth of said rack, when engagement takes place and the engine commences to ascend. By this means the teeth of the rack and gear are prevented from breaking off, owing to the former riding the latter.

The lateral guards *r* prevent fine coal from dropping on the wheels, finding its way between its sections and gear-wheel, getting into the curved slots *s* and locking the said gear against rotation under the afore-described circumstances. The bridge-guard operates in like manner by preventing the teeth of the gear from filling with coal-dust.

It is evident that the gear may be secured, as above set forth, to either side of a driving-wheel, to engage a rack at the corresponding side of the bearing-rail, and be equally effective. The boiler *N* is inside of the cab, and is mounted by means of trunnions *k* in pillow-blocks *l*, so as to vibrate and preserve a normal vertical position. The stack *m* extends through a slot, *s*', in the roof of the cab, and carries a shield, *n*, that covers the said slot, and that, moving with the stack, excludes rain and snow from the inside of the cab.

It will be observed that the weight of the cab, the engine, and boiler counterbalances that of the tender and its coal and water supply.

This device is peculiarly adapted to hauling passenger-cars, freight-wagons, and towing canal-barges. In the latter employment the draw-bar *O* will be jointed, so as to be thrown up vertically, in order to raise the tow-rope and allow an engine passing in an opposite direction free passage under it.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a cab having a slot in its roof and pillow-blocks on its floor, a steam-generator jour-

naled in said blocks, its stack extending through the said slot, and a sliding guard secured to the stack and covering the slot, substantially as specified.

2. A double-flanged driving-wheel for locomotive-engines, consisting of the flanged section *h*, having a hub, *j*, the reduced gear-wheel *j'*, rotating on said hub, and provided with curved check-slots *s*, the annular flange-section *h'*, passed on the hub outside of the gear, and bolts *i*, extending through the said sections and slots, substantially as specified.

3. A locomotive-engine having its cab and tender arranged side and side, connected above and divided below, and between the engines an opening, *g*, leading into the coal-bunker, and provided with lateral guards *r* and bridge-guard *p*, adapted to protect the wheels and track from fuel thrown from the bunker, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

HENRY SAMULE PRUYN.

Witnesses:

WALTER C. MASI,
JOHN A. ELLIS.